

L Number	Hits	Search Text	DB	Time stamp
1	285448	\$7board.ti,ab,bsum,clm.	USPAT; US-PGPUB	2003/10/07 10:35
2	74199	air near5 (moisture or humid or humidity or vapor or moist or wet or damp)	USPAT; US-PGPUB	2003/10/07 10:38
3	68433	air near4 (moisture or humid or humidity or vapor or moist or wet or damp)	USPAT; US-PGPUB	2003/10/07 10:42
4	13820	(condition or conditioner or conditioning) same (air near4 (moisture or humid or humidity or vapor or moist or wet or damp))	USPAT; US-PGPUB	2003/10/07 10:42
5	71398	(grassy or lignocellulose or ligno-cellulosic or cellulose or cellulosic or wood or woody or non-woody or rice or straw or hemp or bamboo) with (fibrous or fiber or strand or chip or wafer or particle)	USPAT; US-PGPUB	2003/10/07 10:42
6	10918	\$7board.ti,ab,bsum,clm. and ((grassy or lignocellulose or ligno-cellulosic or cellulose or cellulosic or wood or woody or non-woody or rice or straw or hemp or bamboo) with (fibrous or fiber or strand or chip or wafer or particle))	USPAT; US-PGPUB	2003/10/07 11:23
7	68433	air near4 (moisture or humid or humidity or vapor or moist or wet or damp)	USPAT; US-PGPUB	2003/10/07 10:42
8	13820	(condition or conditioner or conditioning) same (air near4 (moisture or humid or humidity or vapor or moist or wet or damp))	USPAT; US-PGPUB	2003/10/07 11:23
9	216	(\$7board.ti,ab,bsum,clm. and ((grassy or lignocellulose or ligno-cellulosic or cellulose or cellulosic or wood or woody or non-woody or rice or straw or hemp or bamboo) with (fibrous or fiber or strand or chip or wafer or particle))) and ((condition or conditioner or conditioning) same (air near4 (moisture or humid or humidity or vapor or moist or wet or damp)))	USPAT; US-PGPUB	2003/10/07 10:43
10	2	("4945652"   "5063010").PN.	USPAT	2003/10/07 10:58
11	2	5733396.URPN.	USPAT	2003/10/07 10:59
12	2	("4060580"   "5063010").PN.	USPAT	2003/10/07 11:02
13	4	("2044213"   "2388487"   "2495043"   "3130114").PN.	USPAT	2003/10/07 11:10
14	2	4227965.URPN.	USPAT	2003/10/07 11:13
15	595717	vacuum or vacuumed or vacuuming or suction or suctioned or suctioning or (negative adj1 pressure) or negative-pressure	USPAT; US-PGPUB	2003/10/07 11:22
16	3313	(air near4 (moisture or humid or humidity or vapor or moist or wet or damp)) with (vacuum or vacuumed or vacuuming or suction or suctioned or suctioning or (negative adj1 pressure) or negative-pressure)	USPAT; US-PGPUB	2003/10/07 11:23
17	44	(\$7board.ti,ab,bsum,clm. and ((grassy or lignocellulose or ligno-cellulosic or cellulose or cellulosic or wood or woody or non-woody or rice or straw or hemp or bamboo) with (fibrous or fiber or strand or chip or wafer or particle))) and ((air near4 (moisture or humid or humidity or vapor or moist or wet or damp)) with (vacuum or vacuumed or vacuuming or suction or suctioned or suctioning or (negative adj1 pressure) or negative-pressure))	USPAT; US-PGPUB	2003/10/07 11:23

DOCUMENT-IDENTIFIER: US 20020084548 A1

TITLE: Method and apparatus for making building panels having low edge thickness swelling

----- KWIC -----

Summary of Invention Paragraph - BSTX (15):

[0014] Attempts have been made to reduce press time by preheating the flakes on the forming surface, such as disclosed in U.S. Pat. Nos. 5,643,376 and 5,733,396 to Gerhardt et al (incorporated by reference in their entirety). Therein, a particle mat is heated by concurrently passing through the mat treatment air coming from an air-conditioning system and having a predetermined moisture content and dew point such that the mat is preheated to a predetermined temperature while liquid in the treatment air is allowed to condense in the mat to, at most, a maximum liquid content. Other attempts to preheat the mat employs the use of microwaves; See, U.S. Pat. No. 5,913,990 to Kramer, or steam; See, U.S. Pat. No. 5,993,709 to Bonomo, or hot-air; See, U.S. Pat. No. 6,054,081 to Bielfeldt, prior to the pressing step (all patents are herein incorporated by reference in their entirety).

US-PAT-NO: 6083437

DOCUMENT-IDENTIFIER: US 6083437 A

TITLE: Method for dimensional stabilizing treatment of wood and  
wood composite

----- KWIC -----

Brief Summary Text - BSTX (9):

While repeatedly practically carrying out the dimensional stabilization of wood or wood composite in accordance with the above treating method, the present inventors have experientially found that in some cases, high pressure steam is not uniformly distributed throughout the wood or wood composite dependently upon, for example, specific gravity, thickness, size, surface condition of the wood or wood composite, and consequently, an intended dimensional stability cannot be attained. In particular, in a natural woodboard prepared by simply cutting a natural wood such as a plain lumber or thin woodboard, pits which are interconnectively present between vessels and tracheids and contribute to movement of moisture are closed. Accordingly, it is difficult even, for example, by preliminary hot-air circulation heating to discharge moisture contained in the interior of such a natural woodboard to the outside, leading to a long drying time. On the other hand, if high pressure steam is supplied, it does not penetrate well into the interior of the woodboard. In consequence, it is difficult to attain desired dimensional stability.

Document ID	Title
79 US 5736209 A	Compositions having a high ur
80 US 5736204 A	Compostable packaging for co
81 US 5733396 A	Preheating particles in manufa
82 US 5709913 A	Method and apparatus for manu

US-PAT-NO: 5733396

DOCUMENT-IDENTIFIER: US 5733396 A

Anewer  
Times New Roman 12

Manufacture of pressed board

----- KWIC -----

**Brief Summary Text - BSTX (5):**

In the above-identified parent application a method is described whereby a pressed board is heated by concurrently passing through the mat treatment air coming from an air-conditioning system and having a predetermined moisture content and dew point, heating the treatment air passing through the mat to a temperature which is greater by a dew-point differential than the dew point of the treatment air, and controlling the volume rate of flow of the treatment air, and the moisture content of the treatment air such that the mat is preheated to a predetermined temperature while moisture or liquid in the treatment air is allowed to condense in the mat to at most a maximum liquid content.

**Brief Summary Text - BSTX (6):**

The temperature and moisture content of the prewarming treatment air are controlled as is standard in air-conditioning technology, normally by simply heating the treatment air while evaporating in it enough water to achieve the desired moisture content. The dew point of course is the temperature at which moisture will precipitate out of the treatment air stream, that is the temperature where with a given moisture content the relative humidity of the treatment air reaches 100%. The dew-point differential is a measurement of the moisture of the treatment air. It is the difference between the ambient treatment air temperature and the dew point. A large dew-point differential indicates a high saturation deficiency of the treatment air, that is relatively dry treatment air, and on the contrary a small dew-point differential indicates a higher moisture content, that is relatively humid treatment air. The moisture content here refers as is standard to the water-vapor content of the

**United States Patent [iv]**

Gerhardt et al.

US005733396A

(11) Patent Number: 5,733,396

(45) Date of Patent: Mar. 31, 1998

## (56) References Cited

## U.S. PATENT DOCUMENTS

4,842,652 4/1/90 Chacko et al.

5,083,010 1/1/92 Fisher et al.

Primary Examiner—Michael W. Bell

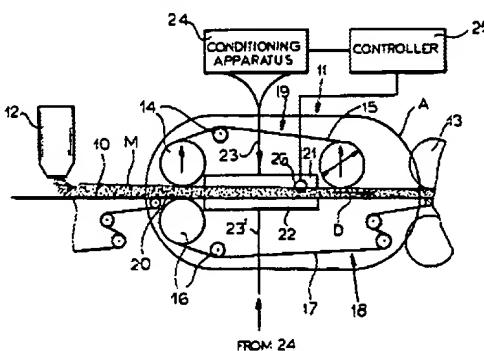
Assistant Examiner—Jian Chua Yao

Attorney, Agent, or Firm—Herbert Deacon; Andrew Wilford

## (57) ABSTRACT

In order to preheat a particle mat having upper and lower faces and edges to a predetermined desired temperature for pressing into a pressed board air is conditioned to a temperature below 100° C. and a moisture content together imparting to the conditioned air a dew point generally equal to the desired temperature. This conditioned air is simultaneously introduced from above and below at the same rate into the respective faces of the mat to produce in the mat a pair of horizontal and vertically appreopriating fronts at which moisture condenses out of the conditioned air. Introduction of the conditioned air into the mat is ended when condensed moisture and the conditioned air are forced out of the edges of the mat.

1 Claim, 1 Drawing Sheet



Document ID	Title
98 US 5638603 A	Systems for molding articles having a high strength, low pressure
99 US 5650221 A	High strength, low pressure dry
100 US 5643376 A	Preheating particles in manufacture of pressed board
101 US 5631053 A	Hinged articles having an inorganic

US-PAT-NO: 5643376

DOCUMENT-IDENTIFIER: US 5643376 A

APPLICANT: G. Stampflepapp GmbH &amp; Co., Krefeld, Germany

Times New Roman 12

----- KWIC -----

## Abstract Text - ABTX (1):

A particle mat for pressing into a pressed board is heated by concurrently passing through the mat treatment air coming from an air-conditioning system, and having a predetermined moisture content and dew point, heating the treatment air passing through the mat to a temperature which is greater by a dew-point differential than the dew point of the treatment air, and controlling the volume rate of flow of the treatment air and the moisture content of the treatment air such that the mat is preheated to a predetermined temperature while liquid in the treatment air is allowed to condense in the mat to at most a maximum liquid content.

## Brief Summary Text - BSTX (12):

According to this invention a particle mat for pressing into a pressed board is heated by concurrently passing through the mat treatment air coming from an air-conditioning system and having a predetermined moisture content and dew point, heating the treatment air passing through the mat to a temperature which is greater by a dew-point differential than the dew point of the treatment air, and controlling the volume rate of flow of the treatment air and the moisture content of the treatment air such that the mat is preheated to a predetermined temperature while liquid in the treatment air is allowed to condense in the mat to at most a maximum liquid content.

## Brief Summary Text - BSTX (13):

The temperature and moisture content of the prewarming treatment air are

## United States Patent [19]

Gerhardt et al.

US5643376A

(11) Patent Number: 5,643,376

(43) Date of Patent: Jul 1, 1997

[54] PREHEATING PARTICLES IN  
MANUFACTURE OF PRESSED BOARD

(75) Inventor: Klaus Gerhardt, Bernd Armin Rapp, Kenzies; Michael Schöfer, Richard; Hans-Erich Städter, Nettetal-Hinsbeck, all of Germany

(73) Assignee: G. Stampflepapp GmbH &amp; Co., Krefeld, Germany

(21) Appl. No.: 493,621

(22) Filed: Jul 4, 1995

(10) Foreign Application Priority Data

At. &amp;amp. 1994 DE 1994-44 23 623.8

(51) Int. Cl. 6 B37N 1/00; B37N 3/10

(52) U.S. Cl. 134/62.2; 150/730; 264/105; 264/DIG. 63

(54) Field of Search 134/62.2, 264/105, 123, DIG. 63

(56) References Cited

U.S. PATENT DOCUMENTS

4,000,380 11/1977 Pumpf.

## FOREIGN PATENT DOCUMENTS

1275912 4/1989 Germany

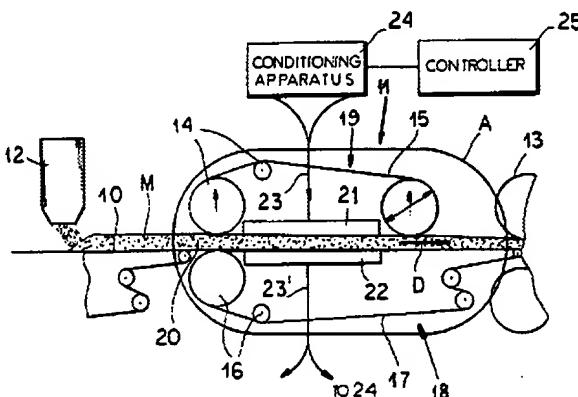
3640582 6/1984 Germany

Primary Examiner—Michael W. Bell  
Assistant Examiner—Sam Chung Yeo  
Attorney Agent, or Firm—Heribert Duhne; Andrew Willard

## (57) ABSTRACT

A particle mat for pressing into a pressed board is heated by concurrently passing through the mat treatment air coming from an air-conditioning system and having a predetermined moisture content and dew point, heating the treatment air passing through the mat to a temperature which is greater by a dew-point differential than the dew point of the treatment air, and controlling the volume rate of flow of the treatment air and the moisture content of the treatment air such that the mat is preheated to a predetermined temperature while liquid in the treatment air is allowed to condense in the mat to at most a maximum liquid content.

19 Claims, 3 Drawing Sheets



Document ID	Title
165 US 4435234 A	Method of producing high pressure consolidated articles
166 US 4434119 A	Method for producing concrete
167 US 4404250 A	Fire-retardant high pressure consolidated articles
168 US 4383858 A	Fire retarding organophosphates

US-PAT-NO: 4404250

DOCUMENT-IDENTIFIER: US 4404250 A

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 Times New Roman 12 pt. [Font] [Bold] [Italic] [Underline] [List] [Method of producing same]

----- KWIC -----

## Brief Summary Text - BSTX (14):

In the formation of an air-laid substrate having uniformity of composition and basis weight and comprising fibers and thermosetting resin, such as by means of an apparatus of the type described above, it is preferable to operate under conditions such that the air has a relative humidity within the range of about 40% to 80%, preferably about 50% to 70%.

## United States Patent (19)

Clarke

[11] 4,404,250

[47] Sep. 13, 1983

[34] FIRE-RETARDANT HIGH PRESSURE CONSOLIDATED ARTICLES CONTAINING AN AIR-LAID WEB AND METHOD OF PRODUCING SAME

[16] Field of Search 428/220, 213, 284, 286, 423/284, 290, 224, 530, 331, 921; 156/253, 306.6, 62.2, 62.4

[56] References Cited

## U.S. PATENT DOCUMENTS

4,374,911 2/1983 McCarter 47L/921

Primary Examiner—Marion McCamish

## [31] ABSTRACT

The invention relates to flame-retardant, high pressure consolidated articles containing an air-laid web and to a method of preparing such articles wherein boric acid or ammonium borate is added as a flame-retardant additive.

12 Claims, No Drawings

[75] Inventor: Theodore B. Clarke, Cincinnati, Ohio

[73] Assignee: Formica Corporation, Wayne, N.J.

[21] Appl. No.: 423,043

[22] Filed: Sep. 23, 1982

[31] Int. Cl. 4 D04H 1/00

[32] U.S. Cl. 156/220, 156/62.2;

156/63.4; 156/215; 156/106.4; 423/213;

423/284; 423/116; 423/288; 423/190; 423/526;

423/284; 423/531; 423/921

US-PAT-NO: 4227965

DOCUMENT-IDENTIFIER: US 4227965 A

TITLE: Production of hardboard

----- KWIC -----

Detailed Description Text - DETX (11):

At this point, the board is bond dry and generally, for most uses, must be moistured or humidified to prevent buckling or warping in subsequent finishing or field installation operations. Such is normally accomplished by subjecting the board to very hot, humid air conditions as in a chamber approaching 40-95% relative humidity and 70.degree.-200.degree. F. for 2-48 hours duration. Thereby, the board absorbs from 2-9% moisture bu weight of the board and optionally may be passed to conventional finishing operations, such as to form interior decorative wall panels.

US-PAT-NO: 4056342

DOCUMENT-IDENTIFIER: US 4056342 A

TITLE: Fiberboard manufacture

----- KWIC -----

Detailed Description Text - DETX (4):

As the fiber mat is being continuously formed, it is continuously conveyed by conveyor 11 to conditioning apparatus 12 where the mat temperature is adjusted to from about 180.degree. F. to 210.degree. F. and the moisture content thereof from about 6% to 12%. Commercially available devices for adjusting temperature and moisture contents of mats are commercially available and known as "through dryers." Adjustment of the mat temperature and moisture is usually accomplished in such apparatus by the use of a flow of hot, moist air through the mat. The air temperature and moisture are, of course, adjusted to give the heat and moisture needed to bring the mat within the ambits noted. Filter means 13 are provided to remove any fibers carried by the circulating air. It is essential to the instant process that such conditioning take place before precompressing. The temperature noted is the glass transition temperature at 6% to 12% moisture of the ligneous hemicellulosic material of the wood. Such temperature must be attained in order to render the ligneous material plastic.

US-PAT-NO: 4009073

DOCUMENT-IDENTIFIER: US 4009073 A

\*\*See image for Certificate of Correction\*\*

TITLE: Production of hardboard in a closed water system

----- KWIC -----

Detailed Description Text - DETX (52):

To further improve the physical and surface finishing properties of S-2-S hardboard, it is conventional to treat or coat the hot out-of-press board with various thermosetting and/or oxidizable resins or oils; i.e., linseed, tung, petroleum hydrocarbon blends, etc. Depending on the degree of property improvement desired, coverages can vary from 2 to 10 lbs./MSF of surface area. The treated board is normally then heat treated in ovens for 2 and 1/2 to 4 hours at 280.degree. F. to assist in curing out the tempering oil, as well as the integral oil binders. This bake treatment will also improve physical (though not surface) properties of untreated board as well. At this point, the board is bone dry and must, for most end uses, be moisturized or humidified to prevent buckling or warping in subsequent finishing and field installation operations. Humidification is normally accomplished in-line, after baking, by subjecting the board to very hot, humid air. Conditions in the chamber approach 95% R.H. (relative humidity) and 200.degree. F for 2 and 1/2 to 8 hours duration. The board absorbs moisture from 2 to 9% by weight of the board, averaging about 4%.



U.S. Patent July 13, 1976

3,969,459

US-PAT-NO: 3969459

DOCUMENT-IDENTIFIER: US 3969459 A

\*\*See image for Certificate of Correction\*\*

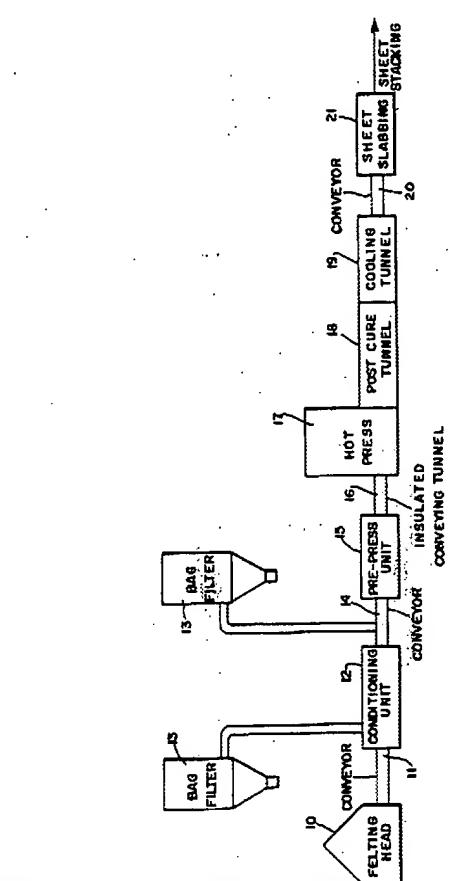
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----- KWIC -----

## Detailed Description Text - DETX (4):

As the fiber mat is being continuously formed, it is continuously conveyed by conveyor 11 to conditioning apparatus 12 where the mat temperature is adjusted to from about 180.degree.F. to 210.degree.F. and the moisture content thereof from about 6% to 12%. Commercially available devices for adjusting temperature and moisture contents of mats are commercially available and known as "through dryers." Adjustment of the mat temperature and moisture is usually accomplished in such apparatus by the use of a flow of hot, moist air through the mat. The air temperature and moisture are, of course, adjusted to give the heat and moisture needed to bring the mat within the amits noted. Filter means 13 are provided to remove any fibers carried by the circulating air. It is essential to the instant process that such conditioning take place before precompressing. The temperature noted is the glass transition temperature at 6% to 12% moisture of the ligneous hemicellulosic material of the wood. Such temperature must be attained in order to render the ligneous material plastic.



Document ID	Title
205 US 3929679 A	Particulate silicate-hydroxyl
206 US 3923697 A	Electrically conductive compo
207 US 3900334 A	Lignocellulosic molding metho
208 US 3875680 A	Apparatus for producing wet e

US-PAT-NO: 3900334

DOCUMENT-IDENTIFIER: US 3900334 A

A few words about the document and product  
Times New Roman 12

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## Detailed Description Text - DETX (22):

3,000 g of white fir flakes containing 1,500 g of water are placed in a 1.5 cu. ft. jacketed autoclave at 100.degree.C. The autoclave is then evacuated and oxygen is added until there is developed an oxygen partial pressure of 135 psi within the autoclave. The temperature of the autoclave contents is then raised to 125.degree.C. over a period of 15 minutes and is held at said level for 1 hour. During this 1 hour period, additional oxygen is supplied to the vessel in an amount of approximately 5 percent, based on the O.D. weight of the lignocellulosic material, the total weight of oxygen supplied during this and the initial steps being 320 g. Oxygen consumption during this run is calculated to be 20 weight percent of the O.D. weight of the lignocellulosic material. The material is now withdrawn from the autoclave, it having a moisture content of 43 weight percent, and to it is then added 15 percent of maleic anhydride and 2 percent benzoyl peroxide, said percentages being expressed on the O.D. weight of the oxidized lignocellulosic material. The resulting material is then dried to a 2 percent moisture level using air at about 50.degree. to 60.degree.C., following which the dried material is pressed under the conditions recited above in Example 1. There is thus obtained a particle board having good strength and dimensional stability.

United States Patent (19) BEST AVAILABLE COPY (11) 3,900,334  
(45) Aug. 19, 1975

## (54) LIGNOCELLULOSIC MOLDING METHOD AND PRODUCT

(75) Inventor: David L. Brink, Berkeley, Calif.

(73) Assignee: The Regents of the University of California, Berkeley, Calif.

(21) PBD: Sept. 27, 1973

(21) Appl No: 401,444

## Related U.S. Application Data

(63) Continuation-in-part of Ser. No. 133,688, April 13, 1971, abandoned.

(52) U.S. Cl. .... 106/163; 260/212; 264/124

(51) Int. Cl. .... C08B 23/00; C08B 27/34;

C08B 27/52

(58) Field of Search .... 106/163; 264/124; 162/4;

162/65; 260/212

(56) References Cited

## UNITED STATES PATENTS

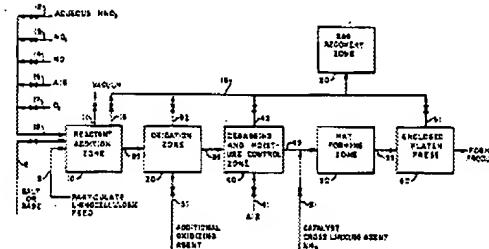
2,332,900	Vaded	240/212
2,334,473	J. W. G. Doherty	240/212
2,356,393	W. H. H. Hickl	240/212
2,730,834	J. F. G. Nieuwenhuizen	240/123
3,310,499	J. V. Vogel	264/124

Primary Examiner—Theodore Morris  
Attorney, Agent, or Firm—Stanley Blaustein, Donovan J.  
DeWitt

## (157) ABSTRACT

Particulate lignocellulosic materials containing water are subjected to oxidation with nitric acid, oxygen or with a mixture of oxygen and citric acid under conditions adapted to form carbonyl groups, along with some carboxyl groups. As a result of this treatment the oxidized material becomes activated so as to undergo self-bonding when it is later molded under elevated conditions of temperature and pressure. This oxidation reaction proceeds at elevated temperatures until there has been a net consumption by the lignocellulose of about 1.25 to 25 weight percent of oxygen as supplied either as such and/or by way of nitric acid. These percentages are calculated on a dry lignocellulosic material basis. The oxidized product can then be pressed into the desired shape under elevated pressures and temperatures effective to induce cross-linking or other molecular cross-linking reactions between functional groups present in the lignocellulosic molecule or between such groups and those of other chemicals which are added, thus providing a molded structure. Bonded-up as well as other molded products of high strength and excellent resistance to moisture absorption can thus be obtained from a variety of lignocellulosic raw materials.

17 Claims, 3 Drawing Figures



US-PAT-NO: 5395656

DOCUMENT-IDENTIFIER: US 5395656 A

TITLE: Method and composition for treating wood

----- KWIC -----

Abstract Text - ABTX (1):

A wood preservative composition which contains poly ethylene oxide along with poly vinyl pyrrolidone is applied to wood in a four-step process. In the first step, moisture and excess resin are removed from the wood. In the second step, the preservative composition is applied to the wood by pressure injection. In the third step, the container for the wood is drained and excess solution is transferred to a holding tank. In the fourth step, a catalyst, either heat or a low-pH composition, is applied to the wood to cause chemical bonding of the preservatives within and with the wood. As a part of the fourth step, excess moisture is removed from the wood by subjecting the wood to a vacuum to draw out excess moisture and then subjecting the wood to a flow of desiccated air which absorbs the moisture.

US-PAT-NO: 5169687

DOCUMENT-IDENTIFIER: US 5169687 A

TITLE: Supercritical fluid-aided treatment of porous materials

----- KWIC -----

Brief Summary Text - BSTX (20):

A still further embodiment of the invention is a process for treating wood to improve its physical properties comprising subjecting the wood to negative pressure to remove moisture and air therefrom; immersing the wood for a predetermined time in a supercritical solvent containing monomer; enlarging the pores of the wood by subjecting the wood to an entrainer dissolved in the supercritical fluid; promoting polymerization of the monomer by dissolving a polymerization catalyst in the supercritical solvent; inhibiting premature polymerization of the monomer by including a polymerization inhibitor in the supercritical solvent; facilitating the transport of monomer from bulk in the cell walls of the wood by dissolving an additional solvent in the supercritical solvent; subjecting the immersed wood to conditions sufficient to polymerize the monomer within the cells of the wood; and separating the wood containing polymers from the supercritical fluid, thereby making a wood having improved physical properties.

Brief Summary Text - BSTX (41):

Preferably, prior to treatment in accordance with this invention, the porous material, e.g. wood, is preconditioned to remove air and moisture. This is typically accomplished by an air-dry atmospheric pressure method over a period of, say, 2-3 months or by a negative pressure method such as confining the wood in a closed container and applying a vacuum of, say, 22-25, typically, 10-15 mm Hg absolute for a time, e.g. 5 minutes to 30 minutes, sufficient to reduce the air and moisture content of the wood to, typically, 4-15% moisture by weight.

Detailed Description Text - DETX (3):

The first method includes removing air and moisture from the wood by vacuuming with or without the application of heat, preparing an extraction feed including a supercritical solvent, using the extraction feed to remove

extractives from the wood, preparing an impregnation feed including supercritical solvents, using the impregnation feed under supercritical conditions of temperature at pressure to impregnate the wood with a monomer, monomer mixture or polymer, separating the monomer, monomer mixture, or polymer from the supercritical solvent by precipitation as the supercritical solvent is depressured below supercritical conditions, which depressuring decreases the solubility of the monomer, monomer mixture, or polymer thereby causing the precipitation thereof, followed by, for example, in situ graft polymerization, where a chemical link is formed between the impregnated polymers and the wood fibers, thereby providing a wood-composite having superior mechanical and chemical properties compound to untreated wood. Basically, this process includes preparing an extraction feed, performing the extraction, preparing an impregnation feed, performing the impregnation, followed by precipitation and polymerization.

DERWENT-ACC-NO: 1993-337565

DERWENT-WEEK: 199343

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TITLE: **Board** mfr. for heat and pressing - by vapour and gas  
extn. and air washing in plant attached

INVENTOR: STALLHERM, H

PRIORITY-DATA: 1992DE-4212164 (April 10, 1992)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
DE 4212164 A1	October 21, 1993	N/A	002	B01D 047/00
DE 4212164 C2	October 12, 1995	N/A	004	B01D 047/00

INT-CL (IPC): B01D047/00, B08B003/02 , B08B015/00 , B27N003/00 , F04D017/00

ABSTRACTED-PUB-NO: DE 4212164A

BASIC-ABSTRACT:

The process used during the press manufacture of boards, extracts the noxious gases and dust, and cleans these out of the airflow. By means of a pump and stages of washing, a fluid is sep'd. from the airflow as it passes to the atmosphere. The washing procedure is in two parts to utilise condensation of vapours and gas, and then to intensely clean the airflow.

The pressed **board** (10) lies between two metal conveyors (11, 12) during the pressure and heat operation. The fumes rise into the chamber (14) which has input into an exhaust system (15) with flexible connections (39). The initial wash in the units (16) has fluid delivered by the pump (21) from the tank (20) through pipes (32, 23) and valves (22). This prevents a fire hazard in the extraction pipe (19) which is under suction by the extractor fan (18).

The main connection (26) can also be connected to the washing fluid by valve (33). The fluid from the tank (20) may contain an oxidising chemical to neutralise the chemical vapours or gases arising from the pressing process. Before passing through the main connection (26), the mixture may have an addition of coagulant along the pipe (41) supplied by the pump (40). The mixture along the pipeline (19) may have temperature regulation, in order to condense the vapours. The resultant fluid is then extracted in the container (25), and passed back to the tank (20).

In the tank there is a water supply level regulator, and solid matter extraction section (34), and a floating mass extraction facility (29). A further possibility is for the extraction fan (18) to have a separate supply of fresh water, to wash the final traces of pollutant from the air before it is allowed to pass to the atmosphere along funnel (36). The water is passed into the tank (20) from (35).

USE - To dispose of pollutants such as paraffin, resins, phenols, formaldehyde, oil vapour and particles of wood, etc. during the hot press stage.

ABSTRACTED-PUB-NO: DE 4212164C

EQUIVALENT-ABSTRACTS:

A process for sucking away air impurities such as gases, vapours and small particles, during the prodn. of chip board and similar pressed components, includes feeding the impurities through nozzles with a wash fluid, passing the latter through a separator to remove liq. from the air and then passing the air to atmos. The wash fluid is fed into a distribution line and part of the flow is fed into the suction line via nozzle members. The air is cooled to its dew point and the other wash water stream is fed into the separator.

ADVANTAGE - The process is efficient and reliable, and pollutants can be effectively removed.

----- KWIC -----

Basic Abstract Text - ABTX (2):

The pressed board (10) lies between two metal conveyors (11, 12) during the pressure and heat operation. The fumes rise into the chamber (14) which has input into an exhaust system (15) with flexible connections (39). The initial wash in the units (16) has fluid delivered by the pump (21) from the tank (20)

through pipes (32, 23) and valves (22). This prevents a fire hazard in the extraction pipe (19) which is under suction by the extractor fan (18).

Basic Abstract Text - ABTX (5):

USE - To dispose of pollutants such as paraffin, resins, phenols, formaldehyde, oil vapour and particles of wood, etc. during the hot press stage.

Title - TIX (1):

Board mfr. for heat and pressing - by vapour and gas extn. and air washing in plant attached

Equivalent Abstract Text - ABEQ (1):

A process for sucking away air impurities such as gases, vapours and small particles, during the prodn. of chip board and similar pressed components, includes feeding the impurities through nozzles with a wash fluid, passing the latter through a separator to remove liq. from the air and then passing the air to atmos. The wash fluid is fed into a distribution line and part of the flow is fed into the suction line via nozzle members. The air is cooled to its dew point and the other wash water stream is fed into the separator.

Standard Title Terms - TTX (1):

BOARD MANUFACTURE HEAT PRESS VAPOUR GAS EXTRACT AIR WASHING PLANT ATTACH